

## INTRAOSSUEOUS INFUSION – ADULTS

**INDICATIONS:** To establish intraosseous access for the critical unstable adult when peripheral or necessary IVs cannot be established after 2 attempts.\*

**DO NOT** delay transport of critical adult patients due to prolonged attempts of this technique. All medications and IV solutions that are usually administered intravenously may be administered through the intraosseous route.

### PRECAUTIONS:

- ✓ The safety of emergency intraosseous infusions in patients with osteoporosis, disease, or other proximal tibia bone pathologies that may blur or obscure landmarks has not been proven
- ✓ **Hypoglycemia**-intraosseous access should only be used under the following circumstances:
  - Severe hypoglycemia (< 35 mg/dl)
  - Moderate hypoglycemia (< 60 mg/dl) unresponsive 10 minutes after the administration of glucagon
  - All hypoglycemic patients who have IO established must be transported to the hospital
- ✓ When using intraosseous devices, the possibility of air immobilization may exist
- ✓ In general, intraosseous devices are not recommended for use for more than 24 hours
- ✓ Needle insertion must be directed away from the joint space and epiphyseal plate

### CONTRAINDICATIONS (SOME INTRAOSSUEOUS DEVICES ARE NOT APPROVED FOR PEDIATRIC USE):

- ✓ Fracture of the tibia, femur, or humerus
- ✓ Some types of previous extensive orthopedic procedures (e.g. knee replacement)
- ✓ Any infection over the insertion site
- ✓ Inability to locate anatomic landmarks

- ✓ Excessive tissue over the insertion site
- ✓ Burns

**PROCEDURE:**

1. Restrain limb, if necessary.
2. Position patient in the supine position.
3. Cleanse skin with povidone-iodine solution.
4. Locate site 1-2 cm medial and 1 cm distal to the tibial tuberosity.<sup>†</sup>
5. Follow the device specific manufacturer's instructions for placement of the device ([see fig 2.1](#)).
6. Aspirate to confirm placement and obtain blood samples.
7. Connect primed extension tubing.
8. If the patient is responsive to painful stimuli, slowly administer 20-40 mg of 2% **lidocaine (Xylocaine®)** (preservative free) into the port.
9. Perform a pressure flush by administering 10-20 ml of 0.9 NS via syringe.
10. To maintain optimal flow, apply pressure (up to 300 mmHg) to the infusion bag.
11. Secure tubing and catheter.

**TROUBLESHOOTING IN THE EVENT OF OBSTRUCTION OR FAILURE:**

1. Reassess insertion site landmarks.
2. Flush needle cannula.
3. If unsuccessful, consider alternative insertion site, i.e. the contra lateral proximal tibia.

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\*Critically unstable patient types would include CPA, severe hypotension (shock), respiratory failure, and coma.

†If the proximal tibia is inaccessible or contraindicated, the distal tibia or proximal humerus may be used as an alternative.